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## Patent Abstracts of Japan

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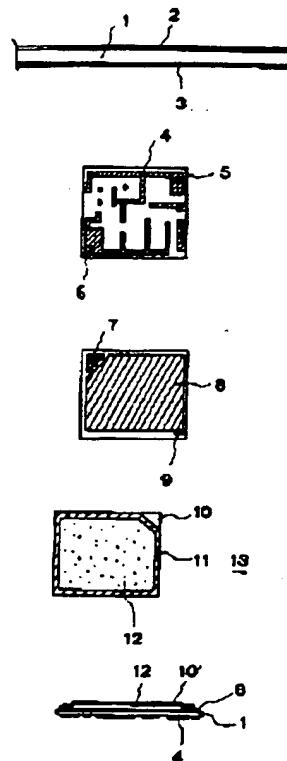
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TITLE : BATTERY INTEGRATED TYPE  
PRINTED CIRCUIT BOARD AND  
MANUFACTURE THEREOF



**ABSTRACT :** PURPOSE: To form an apparatus into a thin type and decrease the connection resistance of a battery to the apparatus by forming metal films of specific thickness on both side surfaces of a resin film, and adopting one surface thereof as an electric circuit wiring part and the other surface as a current collector of a battery.

**CONSTITUTION:** Metal films 2, 3 each having thickness of 10 $\mu$ m or less are formed on both side surfaces of a resin film 1. Next, a patterned electric circuit wiring part 4 and through-holes 5, 6 are formed on both the surfaces by photo-etching. Resistors, capacitors, elements and the like are connected to by soldering or directly formed on the wiring part 4 on the surface, while a positive electrode terminal part 7, a negative electrode current collector 8 and a negative electrode terminal part 9 are formed on the reverse surface. Then, a half cell wherein a positive electrode active material, an electrolyte and a negative electrode active material 12 are laminated except on a positive electrode terminal 10 part is bonded to the reverse surface of the wiring part 4 by means of an adhesive agent 11. Consequently, a printed circuit board which can be formed into a thin type and to which the connection resistance of a battery is small can be provided.

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